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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,137	03/29/2004	Kunio Takeuchi	57810-096	1117

7590 07/20/2006

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600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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NGUYEN, DUNG T

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/811,137

Applicant(s)

TAKEUCHI ET AL.

Examiner

Dung (Michael) T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) 19-23 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-26 is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-14, 18 and 27 is/are rejected.
- 7) ☒ Claim(s) 7, 8 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07/29/04
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Species (claims 1-18 and 24-26) in the reply filed on 05/11/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-3, 5-5, 9-12, 14, and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by JP2002-223039 along with English translation.

With respect to claims 1-3, 10, and 14, Fig.1 shows a semiconductor laser device comprising:

an emission layer 4 formed on a substrate 1;

a semiconductor layer 8a formed on said emission layer while constituting a convex ridge portion;

a current blocking layer 10 consisting of a semiconductor formed to cover at least the side surfaces of said ridge portion;

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a first metal electrode 11 formed to be in contact with the upper surface of said ridge portion; and

convex support (dummy) portions (8b, 9b) arranged on both sides of said ridge portion at a prescribed interval from said ridge portion.

With respect to claim 5, Fig.1 shows said first metal electrode includes an upper surface having an irregular shape reflecting the shape of said convex ridge portion, the shape of said support portions and the shape of said current blocking layer.

With respect to claim 6, Fig.1 shows the height of portions of said first metal electrode located on said support portions exceeds that of a portion located on said ridge portion.

With respect to claim 9, Fig.1 shows side surfaces of said support portions closer to end surfaces of said semiconductor laser device are arranged inward beyond said end surfaces of said semiconductor laser device at a prescribed interval.

With respect to claim 11, para.0030 discloses the thickness of the electrode (contact) is 6 um.

With respect to claim 12, para.0028 and 0030 disclose said first metal electrode (contact) contains a dopant (p mold) having the same conductivity type as said semiconductor layer 8a constituting said ridge portion.

With respect to claim 18, para.0029 discloses the current blocking layer containing Al.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2002-223039 along with English translation in view of Goto et al. (2002/0146855). JP2002-223039 disclose all limitations of the claims except for the first metal electrode includes a plurality of metal electrode layers and further a second metal electrode formed on the first metal electrode, superior in adhesiveness to the first metal electrode.

Goto et al. teach in Fig.1 and Abstract the first metal electrode includes a plurality of metal electrode layers 109-110 and further a second metal electrode 112 formed on the first metal electrode, superior in adhesiveness to the first metal electrode.

it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide JP2002-223039 what is taught by Goto et al. in order to improve the semiconductor laser in reliability and to reduce in operating voltage (Abstract).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP2002-223039 in view of Hayafuji (5387544). JP2002-223039 disclose in para.0028 said semiconductor layer 8a (AlGaAs) constituting said ridge portion consists of a group III-V compound semiconductor

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and all limitations of the claim except for the dopant, contained in said first metal electrode, having the same conductivity type as said semiconductor layer constituting said ridge portion includes at least one element selected from a group consisting of Zn, Cd, Be, Mg, Ca and Ba.

Hayafuji teaches the dopant of Zinc in the metal electrode (col.1, lines 38-41).

it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide JP2002-223039 what is taught by Hayafuji in order to obtain a better electrical conductivity in the electrode of the laser device.

***Allowable Subject Matter***

Claims 7-8 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. JP2002-223039, Goto et al. and Hayafuji fail to disclose the limitations as recited in the claims.

Claims 24-26 are allowed.

JP2002-223039, Goto et al. and Hayafuji disclose all limitations of the claims but fail to teach the limitation of forming a convex support portion so that the interval between the lower end of said ridge portion and the lower end of said support portion is at least 20 um.

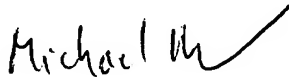
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### Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Michael Dung Nguyen

07/13/06